IN THE CLAIMS:

Please cancel claims 7-9, 15-16, 21 and 33-35 without prejudice.

Please amend claims 10-13 and 17-20 and add claims 36-49 as follows (claims 10-14, 17-20 and 36-49 are reproduced below for the Examiner's convenience):

10. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together, for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system, wherein the path average dispersion of the multiplicity of unit cells is anomalous, and wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion for the unit cell which is close to zero, in order to permit propagation of a pulse wherein the shape of the pulse alternately expands and compresses as it propagates through a unit cell.

11. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together, for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system, wherein the path average dispersion of the multiplicity of unit cells is anomalous, and wherein the profile of a pulse at the beginning of a unit cell is substantially Gaussian in shape.

12. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together, for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system, wherein the path average dispersion of the multiplicity of unit cells is anomalous, and wherein the unit cell is defined to start along the length of a fiber section between its ends, and to end along the length of a fiber section, between it ends.

13. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together, for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system, wherein the path average dispersion of the multiplicity of unit cells is anomalous, and wherein a pulse is launched into the multiplicity of unit cells with a substantially Gaussian shape.

14. (Unamended) An optical communication system according to claim 10, wherein the unit cell is defined to start along the length of the fiber section between its ends, and to end along the length of the fiber section between its ends, and a pulse is launched into a unit cell of the dispersion management system with a substantially Gaussian shape.

17. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite-sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system; wherein the path average dispersion of the multiplicity of unit cells is anomalous; and

wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion of the unit cell which is close to zero, in order to permit the propagation of a pulse through the unit cells wherein the pulse alternately compresses and expands in shape as it propagates through the unit cell, and wherein the pulse is launched into the multiplicity of unit cells with a predetermined shape, which shape is repeated during propagation, at a point in each unit cell.

18. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system; wherein the path average dispersion of the multiplicity of unit cells is anomalous; wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion of the unit cell which is close to zero, in order to permit the propagation of a pulse through the unit cells wherein the pulse alternately compresses and expands in shape as it propagates through the unit cell; and wherein the profile of a pulse at the beginning of a unit cell is substantially Gaussian in shape.

19. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system; wherein the path average dispersion of the multiplicity of unit cells is anomalous; wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion of the unit cell which is close to zero, in order to permit the propagation of a pulse through the unit cells wherein the pulse alternately compresses and expands in shape as it propagates through the unit cell; and wherein the unit cell is defined to start along the length of a fiber section between its ends, and to end along the length of a fiber section, between it ends.

20. (Amended) An optical communication system for transmitting a soliton or soliton-like pulse, comprising a multiplicity of fiber lengths of opposite sign dispersion concatenated together for management of dispersion,

the fiber lengths being formed as a multiplicity of unit cells, each cell comprising two adjacent fiber lengths of opposite sign dispersion, wherein each unit cell is short in relation to the length of the dispersion management system; wherein the path average dispersion of the multiplicity of unit cells is anomalous; wherein the dispersion magnitude of adjacent fiber lengths of a unit cell are both far from zero in relation to the average dispersion of the unit cell which is close to zero, in order to permit the propagation of a pulse through the unit cells wherein the pulse alternately compresses and expands in shape as it propagates through the unit cell; and wherein a pulse is launched into the multiplicity of unit cells with a substantially Gaussian shape.

36. (New) An optical communication system comprising a multiplicity of unit cells, each cell including at least two lengths of optical fiber that have dispersions of opposite sign, wherein the dispersion magnitude of each optical fiber length is substantially greater than the magnitude of the path average dispersion of the unit cell, and wherein the multiplicity of unit cells permits propagation of a stable or quasi-stable optical pulse.

37. (New) The optical communication system of claim 36, wherein the optical pulse alternately expands and compresses as it propagates through the unit cells.

38. (New) The optical communication system of claim 36, wherein the path average dispersion of the multiplicity of unit cells is anomalous.

39. (New) The optical communication system of claim 36, wherein the length of each unit cell is short compared to a nonlinear length of the system.

40. (New) The optical communication system of claim 36, wherein the difference between the dispersion magnitudes of the optical fiber lengths is less than 12 ps^2/Km.

41. (New) The optical communication system of claim 40, wherein the difference between the dispersion magnitudes of the optical fiber lengths is less than 4 ps^2/Km.

43. (New) An optical communication system comprising a multiplicity of unit cells, each cell including two lengths of optical fiber that have dispersions of opposite sign, wherein the multiplicity of unit cells permits propagation of a stable or quasi-stable optical pulse, and wherein the optical pulse is substantially Gaussian in shape.

44. (New) The optical communication system of claim 43, wherein the optical pulse alternately expands and compresses as it propagates through the unit cells.

45. (New) The optical communication system of claim 43, wherein the path average dispersion of the multiplicity of unit cells is zero or anomalous.

46. (New) The optical communication system of claim 43, wherein the length of each unit cell is short compared to a nonlinear length of the system.

47. (New) The optical communication system of claim 43, wherein the difference between the dispersion magnitudes of the optical fiber lengths is less than 12 ps^2/Km.

48. (New) The optical communication system of claim 47, wherein the difference between the dispersion magnitudes of the optical fiber lengths is less than 4 ps^2/Km.

49. (New) The optical communication system of claim 48, wherein the difference between the dispersion magnitudes of the optical fiber lengths is less than 0.1 ps^2/Km.